July 7, 2000

To: Drinking Water Constituents Work Group

From: Rick Woodard

Subject: Progress Report on Sources and Loads Project

The project began on June 10, 2000 after completion of arrangements. The period of this progress report is June 10 through June 30, 2000.

As a first order of business, relevant water quality and flow data sets were acquired. The objective has been to find data for the period October 1, 1975 through most recent. This time period includes 11 wet, 1 above normal, 4 dry and 8 critically dry years, classified according to the Four Basin Index used as the basis of the State Water Resources Control Board's delineation of Delta water rights. These data sources include:

- Water quality data from DWR's Municipal Water Quality Investigations (MWQI) program for the period 1982 through April 2000.
- Water quality data from DWR's Division of Operations and Maintenance for the period January 1995 through May 2000. (Earlier data exist and will be retrieved when DWR staff are able – a staff shortage currently exists.)
- Daily mean electrical conductivity (specific conductance) data from USBR, derived from continuous recording at the Delta Mendota Canal Headworks. The period for which data are in hand is October 1970 through January 1999. (This data set was already in hand. The database can be updated later to include more current records.)
- USGS. Water Quality Network (WQN) data for the period January 1973 through September 1995. More recent data appear not to be available on the Internet or through their data CD. USGS staff will be contacted to determine whether more recent data can be made available.
- USGS stream flow data collected as part of the WQN, and for a similar period
- DAYFLOW data from the Department of Water Resources for the period October 1955 through September 1999. (DAYFLOW is records of flow into and through the Delta at key locations, for the period.)
- Flow data from DWR's California Data Exchange (CDEC) for the period October 1999 through May 24, 2000.

In order to render data from these disparate sources useable for sources and loads computations, the data first had to be put into a compatible format. The format used was Microsoft Access 2000. The M WQI data set is the largest and most relevant to the quality of drinking water supplies taken from the Delta. The MWQI program is presently transitioning to a web-based data server through the Interagency Ecological Program (IEP) and, therefore, their data were not readily useable for this analysis, even though they use Access. DWR staff did, however, provide their data set along with considerable assistance in getting the information translated into the needed format. Of

the data sets translated into compatible formats, the MWQI data required the most effort; however, expenditure of this effort appeared to be indispensable to being able to satisfactorily complete the work and, therefore, the investment was made. Translating the other data sets was relatively uncomplicated, with the exception of the DWR Division of Operations and Maintenance water quality data. Due to a present staff shortage, there will be some unavoidable delay in acquiring their full data set. In the meanwhile, data for the period 1995 through May 2000 were acquired from the Internet. Translating the data was relatively uncomplicated, but rather tedious, as it had to be retrieved one month at a time.

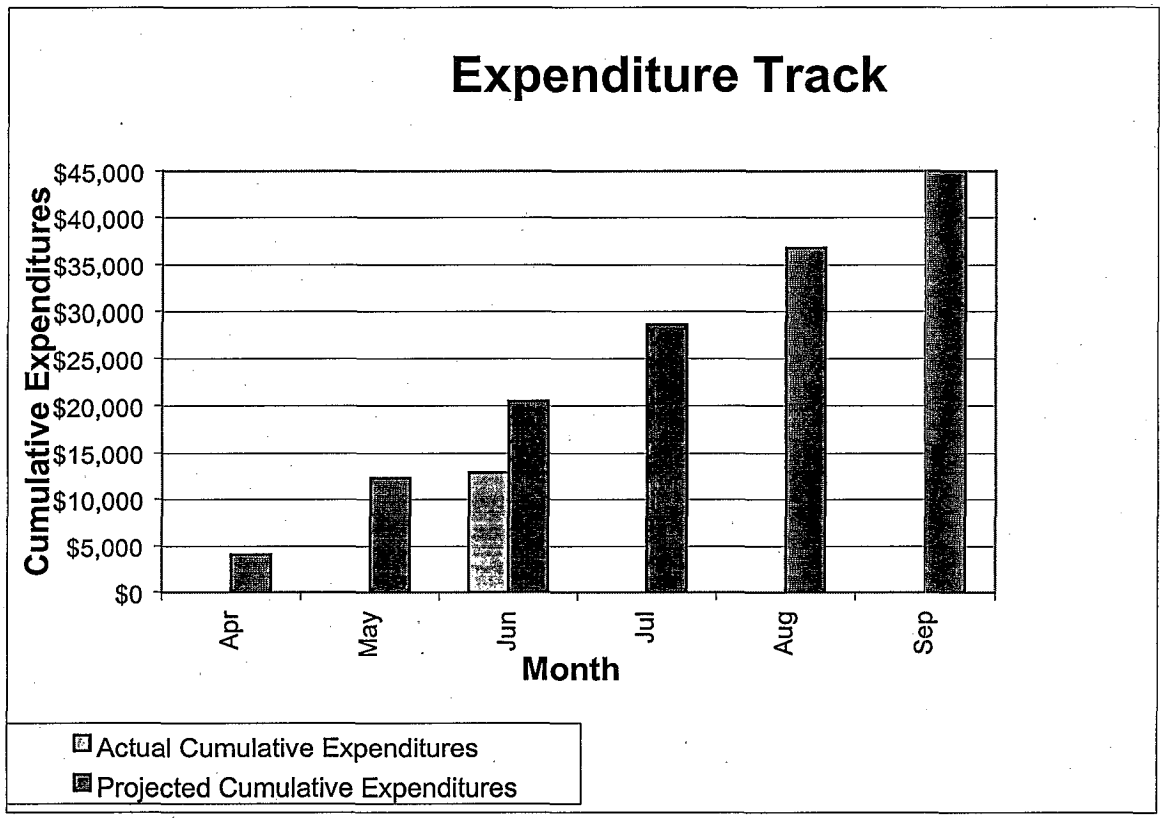
The next requirement was to marry flow data with water quality data in order to enable mass load calculations to be made. The process of mating water quality and flow data for the same dates was generally uncomplicated, but flow data have not yet been acquired for all the stations of interest. In some cases, the data may be unavailable; further effort will be required to make this determination. Flow data should not be needed for stations subject to tidal reversal, as simple mass load determinations will be confounded by tidal influence.

In addition to the data sources listed above, the IEP maintains electrical conductivity data derived from continuous recorders placed at various key Delta locations. Some of these data have been acquired, but more work will be necessary to determine which of the available data are needed, and to acquire complete data sets for the locations of interest.

The Sacramento Regional County Sanitation District and City of Stockton have been requested to provide data for the quantity and quality of their waste water discharges, but the data sets have not yet been received. The City of Sacramento has been contacted for storm water flow data, but these data have also not been received.

Once adequate quality and flow data are in hand, the next step will be to extract the data into Excel spreadsheets, which will be the primary format for creating the statistical and graphical interpretations of the data. This process has begun where the data are available.

This project was to have begun on April 15 and concluded on September 30, 2000, but was started late due to administrative delays. In order to complete the work on schedule it seemed necessary to move quickly, with the result that a heavy time investment in the month of June appears to have brought the project essentially back on schedule. As of June 30, 2000, about 29% of project resources have been expended for accomplishment of the above work, as is reflected on the following graph.



A draft report outline has been prepared and is currently being circulated for comments of the Drinking Water Constituents Work Group (DWCWG). Comments are requested by July 14, 2000 in the expectation that the outline can be finalized by the end of July.

As anticipated, a number of lesser decisions will need to be made concerning methods and analytical approaches. At an earlier meeting of the DWCWG an informal advisory group was formed, including these persons:

Rich Breuer
Paul Hutton
Karl Jacobs
G. Fred Lee
Perri Standish-Lee
Bruce Macler
Lynda Smith
Phil Wendt

Contacts with the group will begin in the near future.

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